

**Abstract**

An integrated fan pump includes a fan, a pump, and an electrical drive mechanism such as an electric motor configured to simultaneously drive both the fan and pump with respect to the housing. A heat exchanger is preferably connected to the pump and the component to be cooled. In one embodiment, the fan head and the pump head are fixed to a common axle, a single magnet is fixed to the fan head, and the magnetic coil is fixed to the housing. In another embodiment, the fan head and pump head rotate about a fixed axle, the magnetic coil is fixed to said housing, one magnet is fixed to the fan head, and a second magnet is fixed to the pump head.

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